ABDOMINAL EXPLORATION.*

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In considering this subject the question arises, should one use the old term—an exploratory laparotomy—or the expression so consistently Godfathered by Dr. Huntington—a diagnostic incision.

I would respectfully suggest that there is room in our nomenclature for both these phrases; that the term "a diagnostic incision" might be well reserved for that procedure which involves cutting down upon an organ definitely known to be diseased, or upon a tumor palpably present in order to determine the nature of the lesion, or the removability of the tumor. Such an operation is comparatively simple and necessitates no great disturbance of the neighboring organs and no extensive search through the peritoneal cavity. The phrase, "an exploratory laparotomy" may well be used to indicate that procedure which involves an investigation of many organs, or may be an extensive peritoneal exploration, as for example the search for the seat of an internal obstruction, or the endeavor to locate the more uncommon foci of origin of acute purulent peritonitis, or in chronic cases the search for the primal factor causing the "stirring events" so picturesquely described by Dr. Herbert Moffiitt at the late State Medical Society, as occurring in the right hypochondriac region.

I further take it that when once the diagnostic puzzle is solved, any further operative step takes that operation outside the category of "diagnostic incision" or "exploratory laparotomy," and enrolls it amongst the list of complete or incomplete operations.

As sane, sober, practical, common-sense individuals, we, I think, must concede that these diagnostic measures are of a grave nature, for associated with such there is a mortality dependent.

1st. Upon the anesthetic, during its administration and from its after effects.

2d. Upon peritoneal sepsis which may occasionally occur in the best regulated of clinics, however thorough the technic.

Such mortality in these diagnostic operations has been estimated at from one to two per cent in some large hospitals; how much more it is in large cities in private practice where every newly fledged graduate is opening abdomens, I would hesitate to say. Such mortality would utterly condemn these procedures were it not that they often form the initial stages of actually curative operations, and that the lives thus saved more than counterbalance the quoted mortality.

In regard to the question of postoperative adhesions, their function-disturbing role has, I believe, been much exaggerated, for it is the adhesions which are the external expression of the internal sepsis that cause trouble, and these chiefly by reason of the internal lesion which they barricade, rather than the adhesions resulting from clean operative work.

There is, however, another accusation which is somewhat widely made against those enthusiasts who in and out of season advocate these diagnostic measures, viz., that they use them in lieu of careful, systematic preliminary investigation and to cloak incomplete and inaccurate diagnostic methods and shuffling habits of reasoning. Any clinician who has seen patients upon whom such operations have been or are about to be performed, and yet discovers a metastatic growth, a leukemic condition of the blood, or maybe an unrecognized renal calculis, is naturally led to give his adherence to this accusation.

Moreover, there is another side of the question, viz., that these procedures are not the diagnostic panaceas which some surgeons would have us believe; for, first, in respect to the diagnostic incision, does not literature fairly teem with the records of lesions supposed at the time of operation to have been malignant, the after history of which proved their simple character? And the opposite must often have occurred. However, these facts cannot be used as an argument against the necessity for such methods of investigation, since the real questions: "Is the mass removable? If not, what is the best palliative operation to perform?" are often answered independently of the nature of the mass.

It is another question, however, in chronic cases as regards the exploratory laparotomy, and this must be so when we consider:

1. That the anatomical position of an organ is no true index as to its physiological function, e. g., a stomach may hang vertical in the abdominal cavity with the pylorus almost at the pubis, and yet its chemical and mechanical functions be performed in a perfectly physiological manner.

2. Though the outside of an organ be normal, that is no proof that the inside is free from disease, e. g., Dr. Jellinek and I have a series of gall-bladder cases in which at operation normal-sized gall-bladders with normal appearing surfaces, capable of being emptied by light pressure, showed on their being opened in obedience to clinical reasoning, the presence of muco-pus or discolored bile containing virulent organisms or gall-stones. The same line of reasoning naturally applies to almost any intra-abdominal viscus, and hence we can readily see that much more can often be learned from a preliminary systematic *correlated* study of physiological function and anatomical position, than by opening the abdomen and gazing at the outside of its contents during a period of function paralysis anesthetically induced.

We all, I presume, have formulated certain classes of cases in which we believe these diagnostic operations to be in order.

1. As such I would name all cases of abdominal tumors of doubtful character, to determine their nature and the question of their removability.

2. All cases of stomach trouble in which there is an absence of free hydrochloric acid, presence of lactic acid and Boas-oppler bacilli, even though no tumor be palpable, in order to determine the question of the removability of the tumor probably present.

3. All cases of stomach trouble with continu-

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ous delay in the emptying, to determine the cause and treatment.

4. Many cases of dyspepsia not included in the above lists occurring in persons at or about middle life which do not yield within a month to well directed medical treatment, more especially if a secondary anemia or wasting occurs, or if occult blood be continuously present in the stools.

5. Some cases of apparent chronic bowel obstruction with symptoms and signs suggesting a constant fixed delay point, even though no tumor be palpable.

All of the above necessitate a "diagnostic incision."

The role of the "exploratory laparotomy" in chronic cases is, in my opinion, much smaller. I would almost restrict it to some instances of upper right hypochrondriac trouble, we recognizing that the exploration will frequently require opening the gall-bladder. In acute cases it is often the first stage of a curative operation.

The mere presence of abdominal pain, of stomach or bowel hemorrhage are in themselves no determining indication for operative diagnosis.

In conclusion, I would say that I believe we should hold, as articles of medical faith both in our practice and in our teaching:

Firstly, that every other method of diagnosis, clinical, chemical, microscopic and radiographic, should be employed before these operations with their one to two per cent mortality be advocated, these investigations being conducted with dispatch so as not to ill-advisedly delay what may turn out to be inevitable.

Secondly, that most of our diagnostic mistakes are avoidable, that they are due to things left undone or to inaccurate observations, or to illogical reasoning, and that it becomes all of us not to console ourselves with the idea that an error was inevitable, but to endeavor to prevent similar mistakes recurring, and thus we will diminish the number of necessary diagnostic incisions or exploratory laparotomies, we in the meantime not forgetting the principle embodied in the old adage—that when there is a reasonable doubt, whether one of the above procedures may not lead to a successful curative operation, then let us give the patient the benefit of the doubt and advise accordingly.

LIVER INFECTION FROM APPENDICITIS.*

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We are occasionally confronted by a group of symptoms in appendicitis and the recurrent forms of that disorder that point to the liver or gall-bladder as the seat of lesion, rather than to the caput coli. The symptom complex of moderate liver or gall-bladder lesion has been so pronounced and classified, in many instances, as to have misled even the most experienced observers. The usual manifestations of inflammatory processes at or near the caput coli have been conspicuously absent, and in their stead there has been pain referred to the hepatic region; tenderness over the gall-bladder; jaundice more or less pronounced; pain in the epigastrium after food; bilious vomiting; scanty and highly colored urine containing bile pigment, and jaundiced sclera. So far as I am informed, the manifestations of liver symptoms in affections of the appendix, to the exclusion of those referable to it, have been rarely noted, nor has the etiology been much discussed. Dr. Moffitt, in a paper presented to the State Society at its last meeting, relates a case "of jaundice steadily deepening, leukocytosis marked, tenderness over the gall-bladder and pancreas, a Cammage test pointing to pancreatic lesion and in which an autopsy disclosed a septic peritonitis from a perforated appendix." The writer does not inform us that there was even a suspicion of appendicial involvement. That the symptoms in this case did not warrant surgical interference in the opinion of so astute an observer illustrates their misleading character and the fallacy of relying upon symptomatic treatment in abdominal lesions generally. The following cases illustrate the hepatic disturbance caused by lesions of the appendix in the absence of local symptoms pointing to appendicial trouble:

Case I. Patient male, aged 42; occupation, blacksmith. Eight years since he had a severe attack of vomiting following a full meal, with much pain referred to the epigastrium, which was relieved by oil and hot fomentations. A second attack followed a year later, very like the first in duration and intensity. From that time to the present he has had recurring attacks at shorter intervals. The pain is more intense than formerly, and morphine has been given hypodermically to relieve it. The pain invariably begins at the pit of the stomach and extends to the right hypochondrium. The skin becomes slightly jaundiced and the sclera distinctly yellow with each attack. The local physicians have assured him that he had gall-stones and advised operation for relief. One month since he had a recurrence of symptoms already described, viz., severe pains over the liver and at the navel, slight jaundice and dark-colored urine.

Status praesens, liver within normal limits, with tenderness over the gall-bladder; skin slightly jaundiced; abdomen moderately distended and resistant; no difference in tension of the recti muscles; no pain elicited by pressure over the caput coli or appendix; bowels torpid; urine scant, dark in color and contains bile pigment; red cells 4,500,000 leukocytes 15,000. The condition of the patient clearly warranted abdominal exploration, and although the symptoms were hepatic, I determined to settle first the question of appendicial involvement. On section, the caput coli was found buried in a mass of adventitious tissue in the midst of which was found the remains of a necrosed appendix and an ounce or more of pus. Two years after the operation, there had been no return of vomiting, pain or liver symptoms.

Case II. Patient, farmer, aged 48. First saw him in consultation at his country home. He had general peritonitis. His condition was so critical and his surroundings so unsanitary that an unfavorable prognosis was given. The history was that of repeated attacks of severe pains in the lower bowels. attended by fever, constipation, yellow skin, high-colored and scanty urine. He finally recovered from the attack and came to San Francisco for operation. There were no physical signs of bowel trouble at this time, but his skin was slightly icteroid, and the liver tender on deep pressure. On con-

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